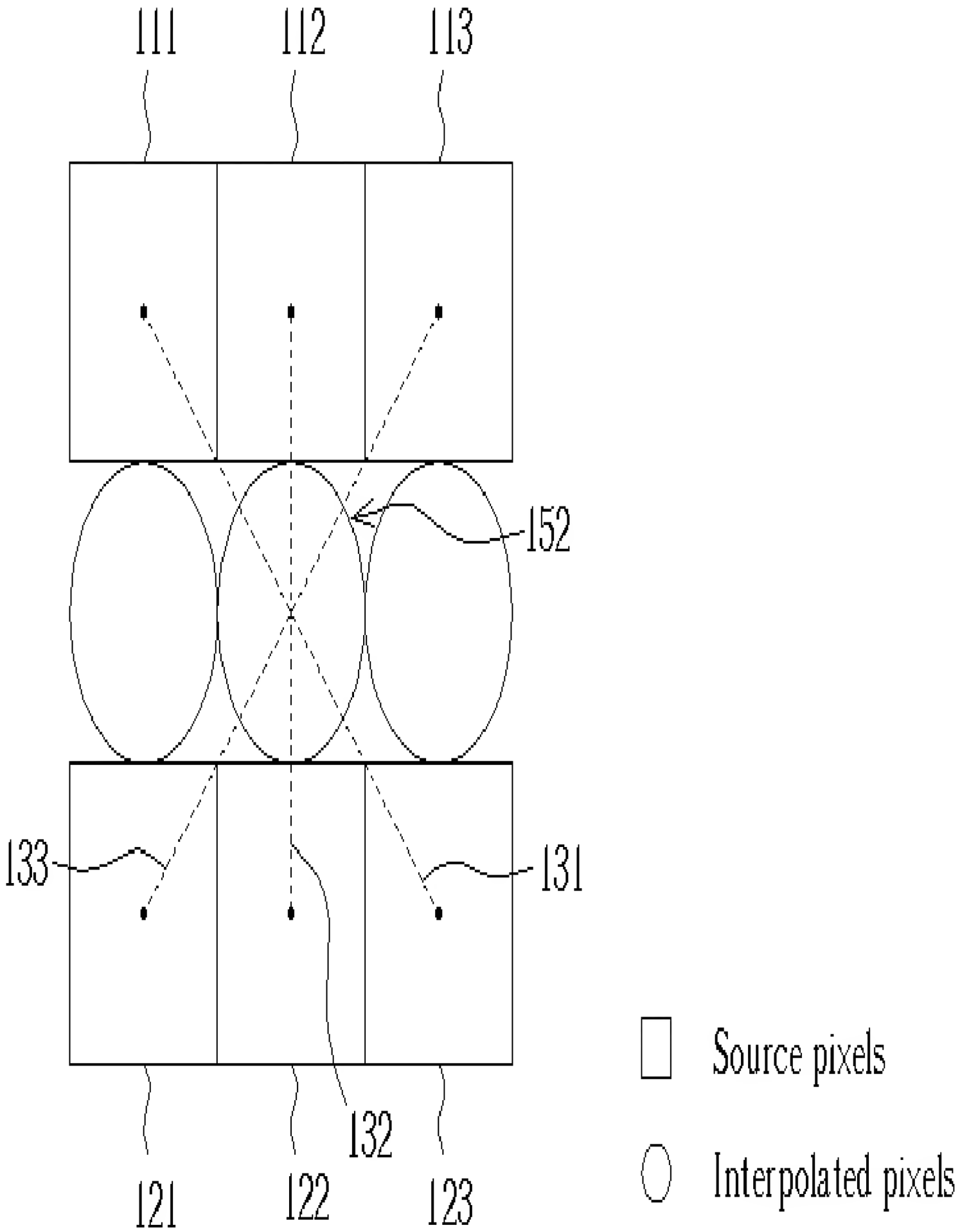

Fig. 1 Prior art

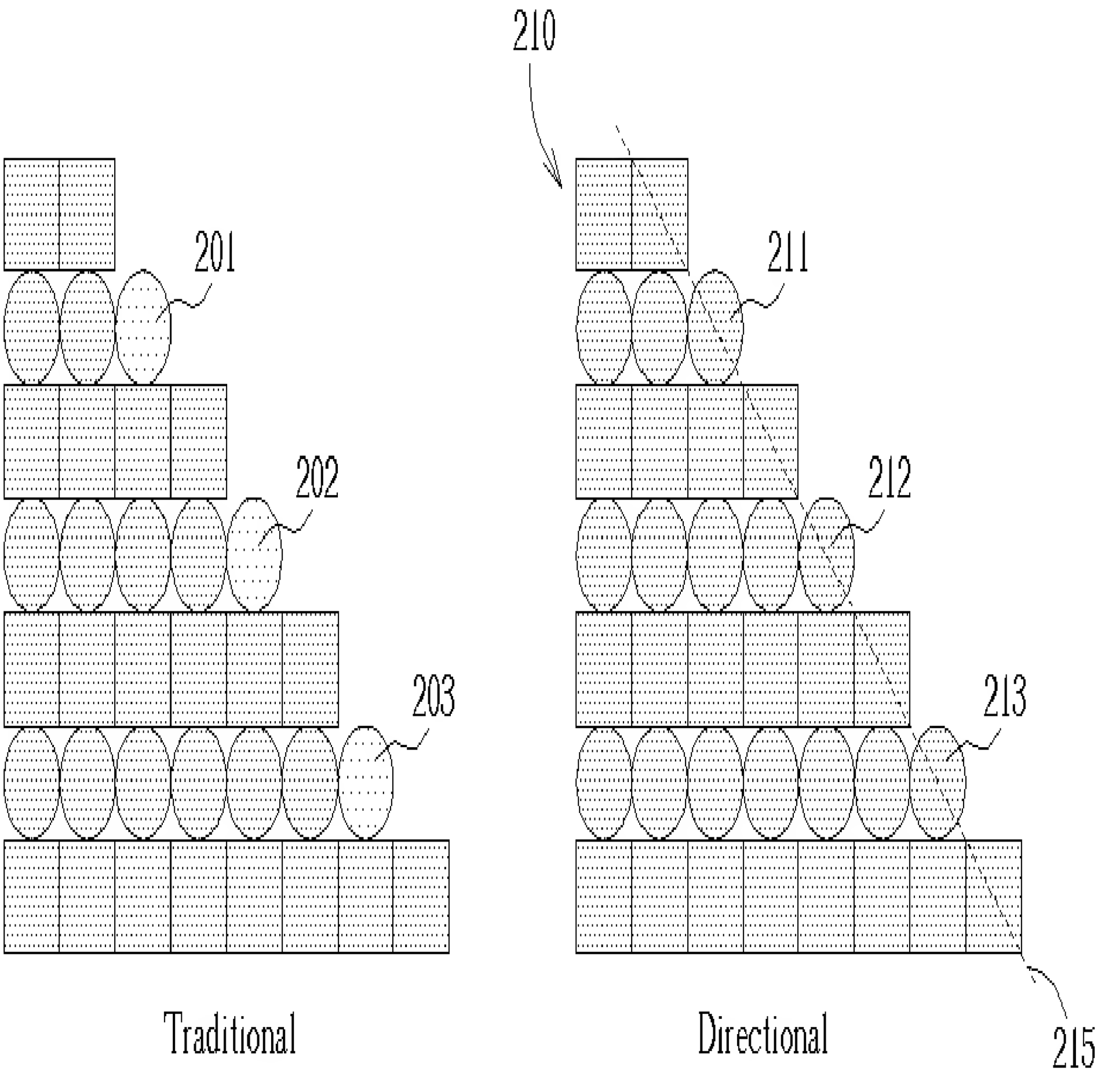

Fig. 2 Prior art

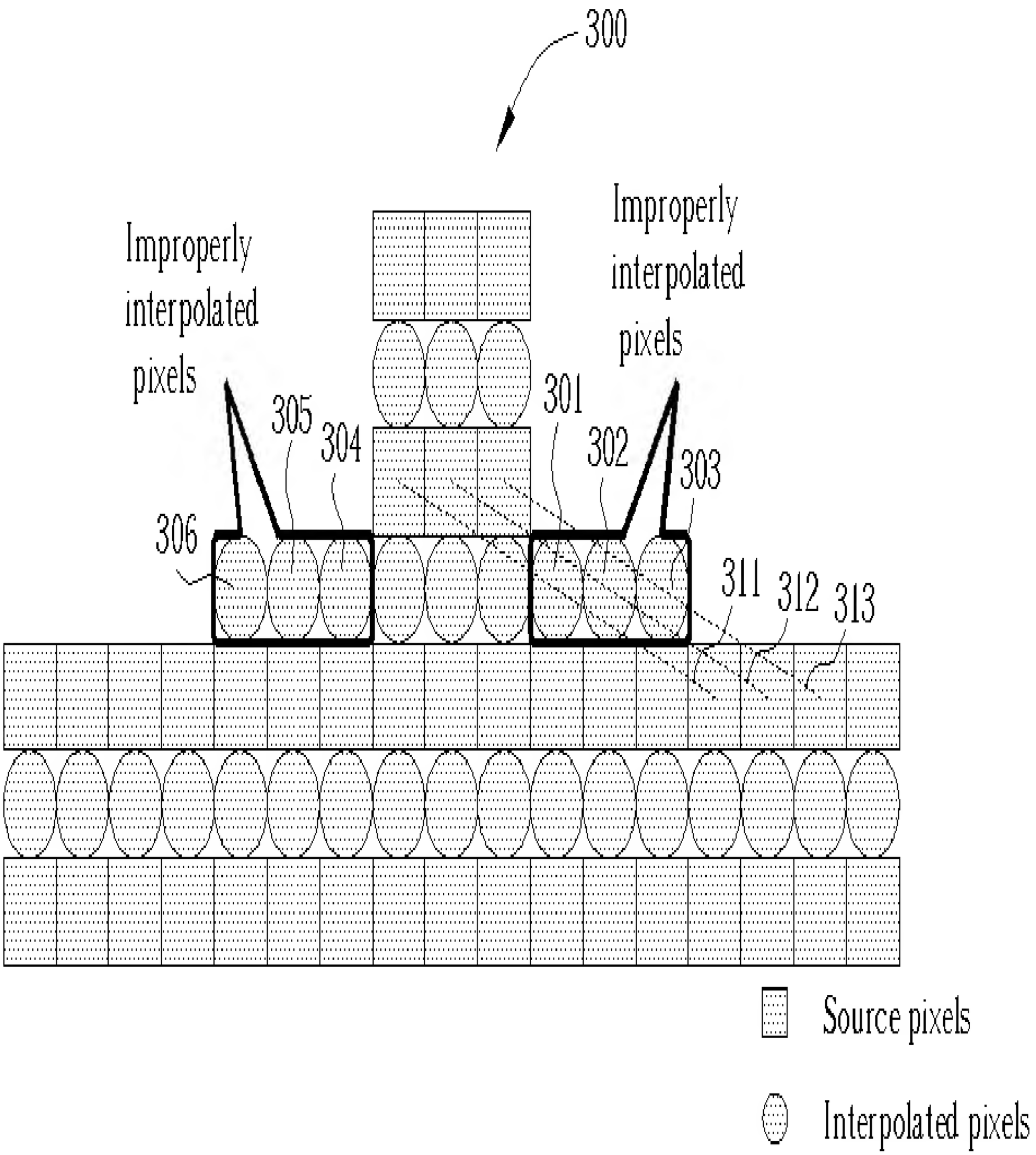

Fig. 3 Prior art

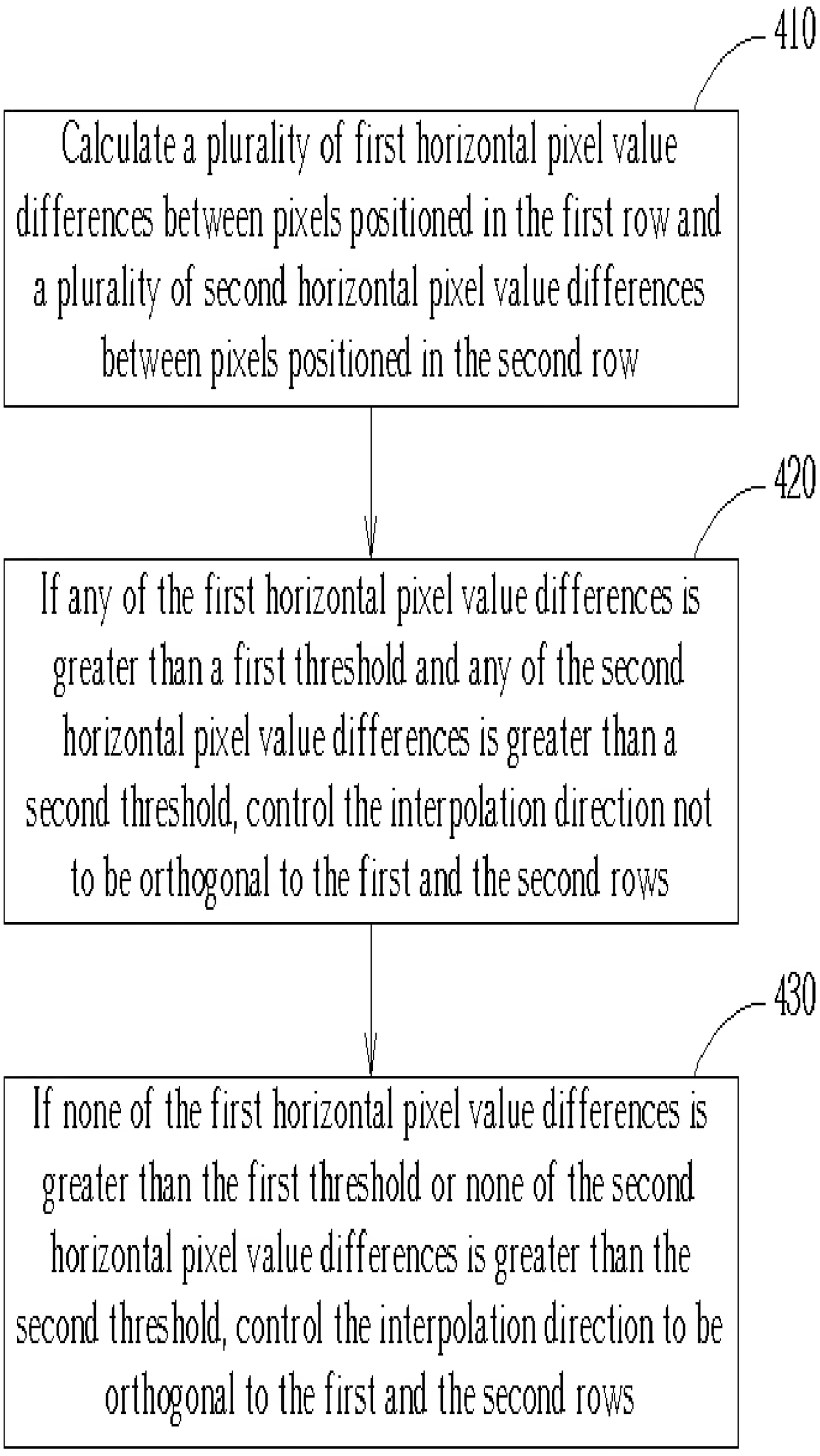
410
Calculate a plurality of first horizontal pixel value differences between pixels positioned in the first row and a plurality of second horizontal pixel value differences between pixels positioned in the second row
420
If any of the first horizontal pixel value differences is greater than a first threshold and any of the second horizontal pixel value differences is greater than a second threshold, control the interpolation direction not to be orthogonal to the first and the second rows
430
If none of the first horizontal pixel value differences is greater than the first threshold or none of the second horizontal pixel value differences is greater than the second threshold, control the interpolation direction to be orthogonal to the first and the second rows

Fig. 4

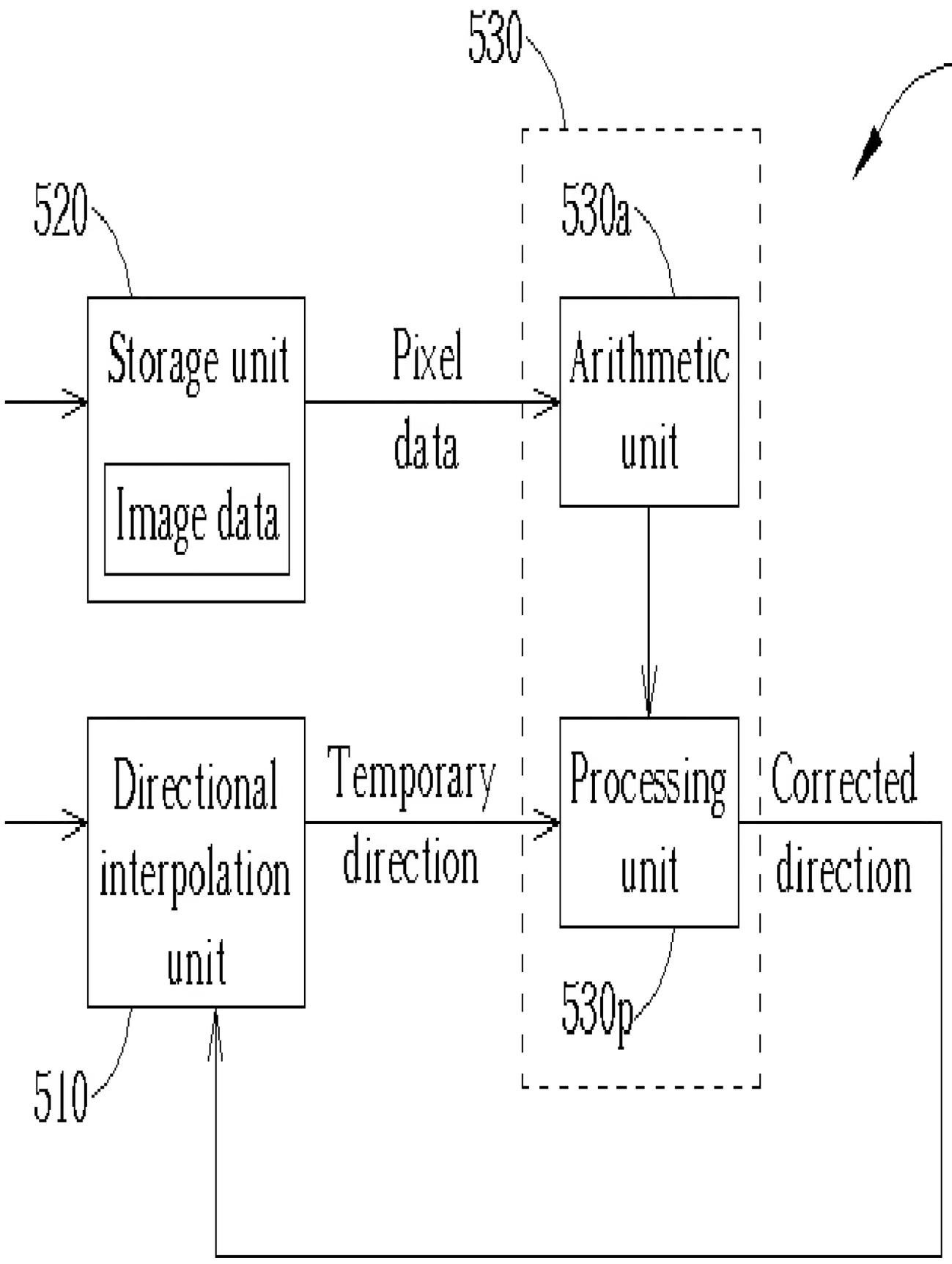
530
500
520
530a
Storage unit
Image data
Pixel
data
Arithmetic
unit
Directional
interpolation
unit
Temporary
direction
Processing
unit
Corrected
direction
530p
510

Fig. 5

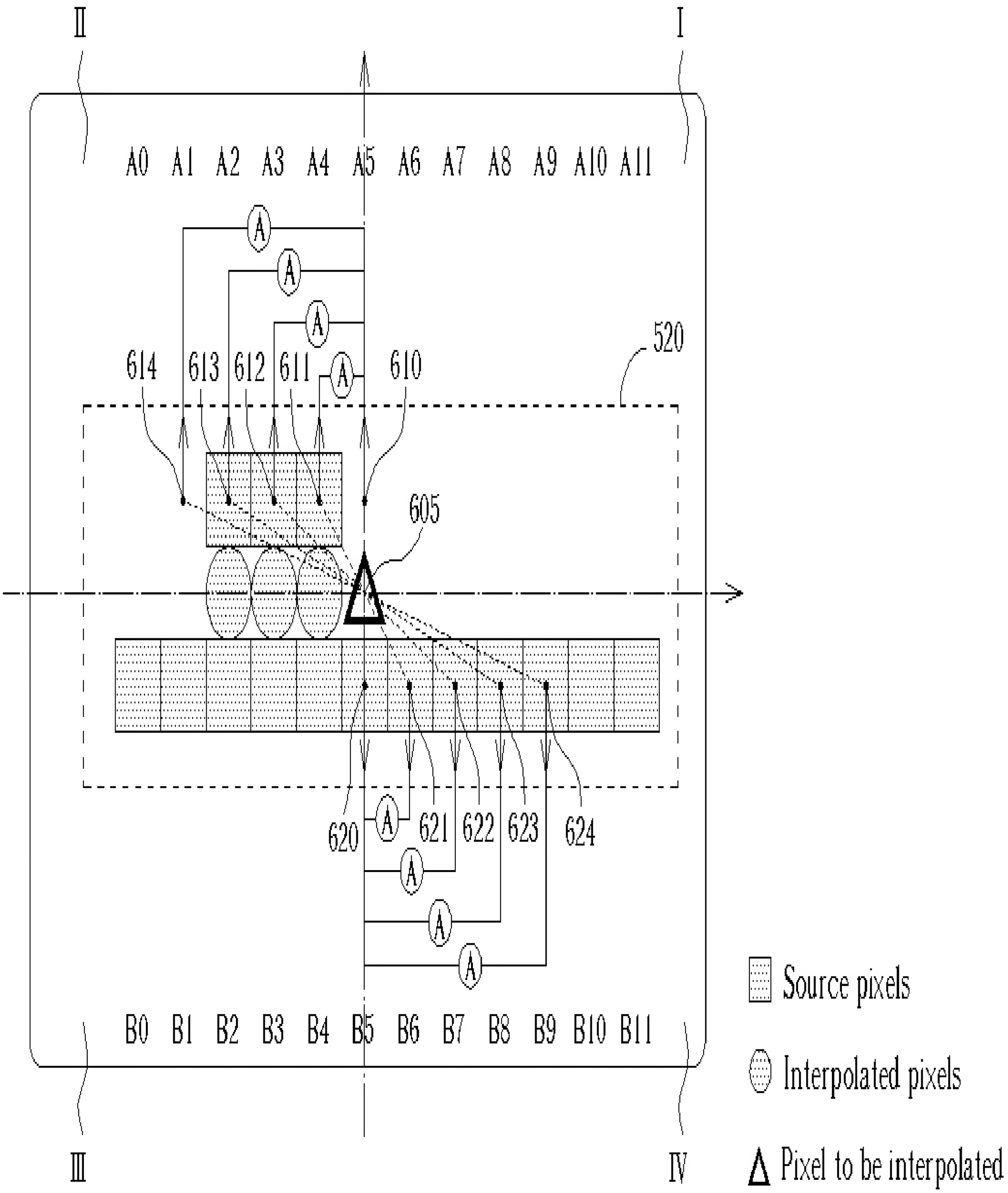
Ⅱ
Ⅰ
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11
A
614 613 612 611 610
520
605
620 621 622 623 624
B0 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11
Ⅲ
Ⅳ
Source pixels
Interpolated pixels
Pixel to be interpolated

Fig. 6

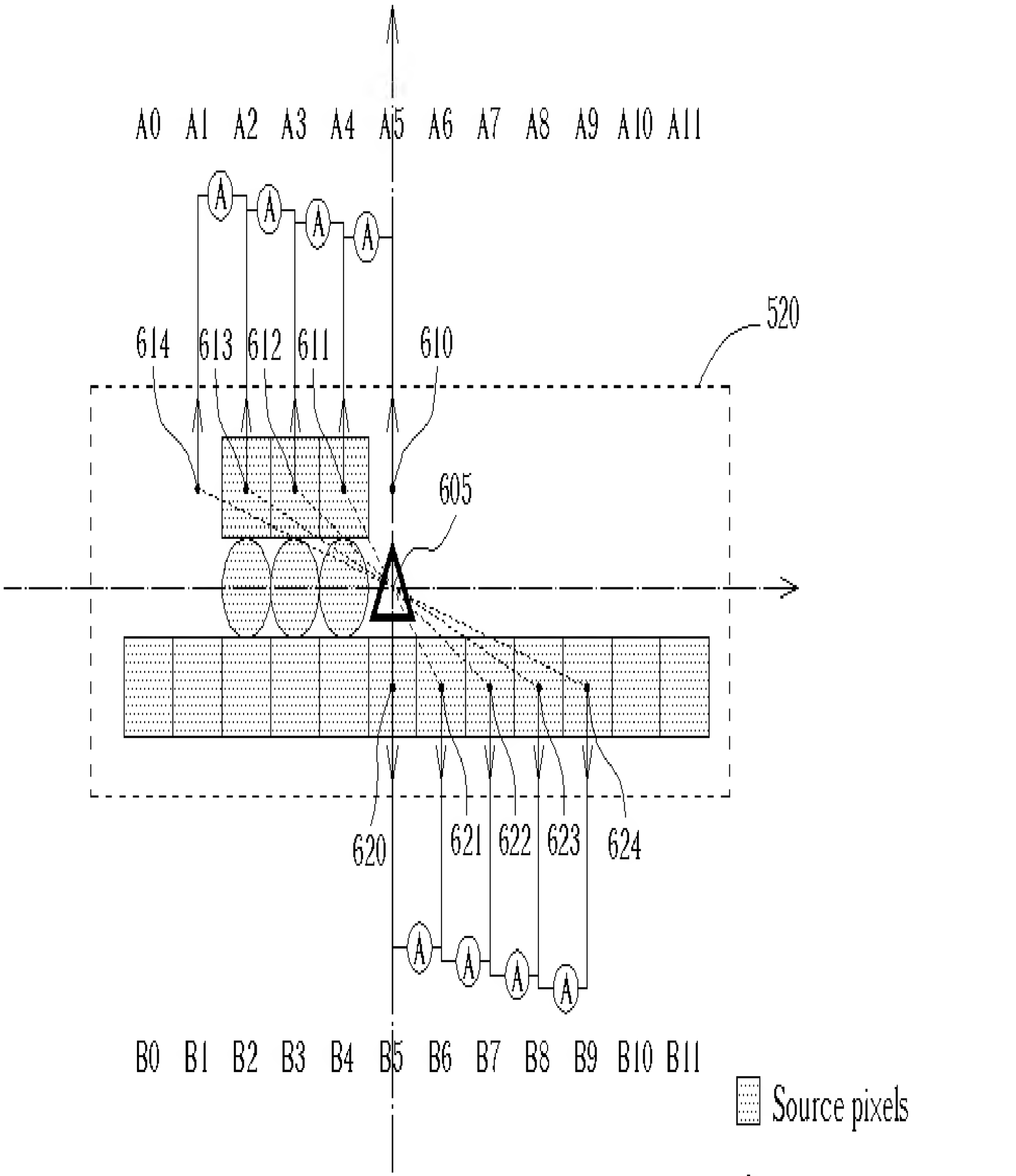
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11
614 613 612 611 610
520
605
620 621 622 623 624
B0 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11
Source pixels
Interpolated pixels
Pixel to be interpolated

Fig. 7

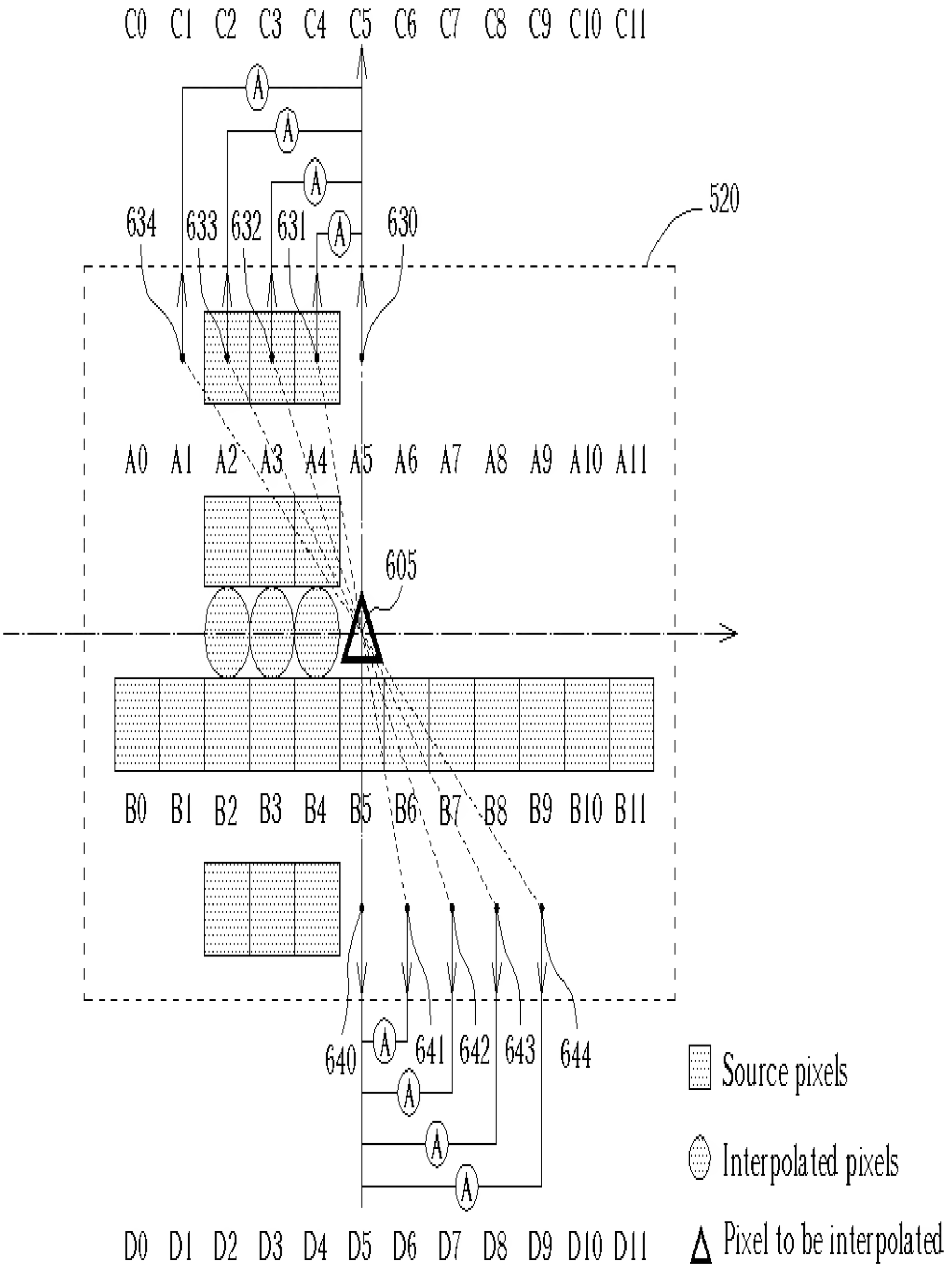
C0 C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11
A
634 633 632 631 630
520
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11
605
B0 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11
640 641 642 643 644
D0 D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11
Source pixels
Interpolated pixels
Pixel to be interpolated

Fig. 8